

TOOL BOX HAVING POSITIONING EFFECT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a tool box having an efficiently
5 positioning effect, and more particularly to a tool box that can be used to
position tools rigidly and stably without slip.

2. Description of the Related Art

A conventional tool box in accordance with the prior art shown in
Figs. 11 and 12 comprises a top cover, and a bottom cover pivotally combined
10 with the top cover. The bottom cover is formed with a plurality of receiving
recesses 1 for receiving and locking a plurality of sockets 4. Each of the
receiving recesses 1 has two spaced partitions 2 each formed with a protruding
block 3 to retain the respective socket 4 between the two spaced partitions 2.
However, the protruding blocks 3 of each of the receiving recesses 1 cannot
15 position the respective socket 4 rigidly and stably, so that the socket 4 easily
slips and detaches from the respective receiving recess 1.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide a tool
box that can be used to position tools rigidly and stably without slip.

20 Another objective of the present invention is to provide a tool box,
wherein the first locking portion and the second locking portion of each of the

receiving recesses form a three-point locking effect, so that each of the sockets is positioned in the respective receiving recess rigidly and stably without sway.

A further objective of the present invention is to provide a tool box, wherein the first locking portion or the second locking portion of each of the receiving recesses is flexible and can be deformed inward, so that each of the sockets can be inserted into and detached from the respective receiving recess easily and conveniently.

In accordance with the present invention, there is provided a tool box, comprising:

a main body formed with a plurality of receiving recesses; and
a plurality of sockets each mounted in a respective one of the receiving recesses, wherein:

each of the receiving recesses has a first wall formed with a first locking portion and a second wall formed with a second locking portion; and

each of the sockets has a first end locked on the first locking portion of the respective receiving recess and a second end locked on the second locking portion of the respective receiving recess.

Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded perspective view of a tool box in accordance with the present invention;

Fig. 2 is a partially cut-away perspective cross-sectional view of the tool box in accordance with the preferred embodiment of the present invention;

5 Fig. 3 is a top plan cross-sectional view of the tool box as shown in Fig. 2;

Fig. 4 is a schematic operational view of the tool box as shown in Fig. 2;

Fig. 5 is a partially cut-away perspective exploded cross-sectional view of the tool box in accordance with another embodiment of the present invention;

Fig. 6 is a top plan cross-sectional assembly view of the tool box as shown in Fig. 5;

Fig. 7 is a schematic operational view of the tool box as shown in Fig. 5;

Fig. 8 is a partially cut-away perspective exploded cross-sectional view of the tool box in accordance with another embodiment of the present invention;

Fig. 9 is a top plan cross-sectional assembly view of the tool box as shown in Fig. 8;

Fig. 10 is a schematic operational view of the tool box as shown in Fig. 8;

Fig. 11 is a perspective exploded view of a conventional tool box in accordance with the prior art; and

Fig. 12 is a side plan cross-sectional assembly view of the conventional tool box as shown in Fig. 11.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to Fig. 1, a tool box 10 in accordance with the preferred embodiment of the present invention comprises a top cover 11, and a bottom cover 12 pivotally combined with the top cover 11. The bottom cover 12 is formed with a plurality of receiving recesses 20.

The too box 10 further comprises a plurality of sockets 30 each mounted in a respective one of the receiving recesses 20. Each of the receiving recesses 20 has a first wall 21 formed with a first locking portion 211 and a second wall 22 formed with a second locking portion 221. Each of the sockets 30 has a first end 31 locked on the first locking portion 211 of the respective receiving recess 20 and a second end 32 locked on the second locking portion 221 of the respective receiving recess 20. Preferably, the first end 31 of each of the sockets 30 is formed with a square first hole 311 to receive the first locking portion 211 of the respective receiving recess 20, and the second end 32 of each of the sockets 30 is formed with a hexagonal second hole 321 to receive the second locking portion 221 of the respective receiving recess 20.

Referring to Figs. 2-4 with reference to Fig. 1, the first locking portion 211 of each of the receiving recesses 20 is provided with a

semi-circular first locking block 40 locked in the first hole 311 of the first end 31 of the respective socket 30. In addition, the second locking portion 221 of each of the receiving recesses 20 is provided with two semi-circular second locking blocks 50 locked in the second hole 321 of the second end 32 of the
5 respective socket 30. In such a manner, the first locking block 40 and the two second locking blocks 50 form a three-point locking effect, so that each of the sockets 30 is positioned in the respective receiving recess 20 rigidly and stably without sway.

Preferably, the two second locking blocks 50 are spaced from each
10 other, and each of the two second locking blocks 50 is flexible, so that the two second locking blocks 50 can be pressed to move toward each other, and the second locking portion 221 of each of the receiving recesses 20 can be deformed inward. In such a manner, each of the sockets 30 can be inserted into and detached from the respective receiving recess 20 easily and conveniently.

15 Referring to Figs. 5-7 with reference to Fig. 1, the first locking portion 211 of each of the receiving recesses 20 is provided with a semi-circular first locking block 40 locked in the first hole 311 of the first end 31 of the respective socket 30. In addition, the second locking portion 221 of each of the receiving recesses 20 is provided with two second locking blocks
20 60 each locked on a periphery of the second hole 321 of the second end 32 of the respective socket 30. In such a manner, the first locking block 40 and the two second locking blocks 60 form a three-point locking effect, so that each of

the sockets 30 is positioned in the respective receiving recess 20 rigidly and stably without sway. In addition, each of the two second locking blocks 60 is formed with a locking groove 61 to lock the periphery of the second hole 321 of the second end 32 of the respective socket 30.

5 Preferably, the two second locking blocks 60 are spaced from each other, and each of the two second locking blocks 60 is flexible, so that the two second locking blocks 60 can be pressed and deformed, and the second locking portion 221 of each of the receiving recesses 20 can be deformed inward. In such a manner, each of the sockets 30 can be inserted into and detached from
10 the respective receiving recess 20 easily and conveniently.

Referring to Figs. 8-10 with reference to Fig. 1, the first locking portion 211 of each of the receiving recesses 20 is provided with an arc-shaped first locking plate 70 locked in the first hole 311 of the first end 31 of the respective socket 30. In addition, the second locking portion 221 of each of the
15 receiving recesses 20 is provided with two arc-shaped second locking plates 80 locked in the second hole 321 of the second end 32 of the respective socket 30. In such a manner, the first locking plate 70 and the two second locking plates 80 form a three-point locking effect, so that each of the sockets 30 is positioned in the respective receiving recess 20 rigidly and stably without sway.

20 The first locking plate 70 of the first locking portion 211 of each of the receiving recesses 20 has a first end extended from the first wall 21 and a second end formed with a first gap 71, so that first locking plate 70 is flexible.

Each of the two second locking plates 80 of the second locking portion 221 of each of the receiving recesses 20 has a first end extended from the second wall 22 and a second end formed with a second gap 81, so that each of the two second locking plates 80 is flexible. Thus, the first locking plate 70 and the two
5 second locking plates 80 can be pressed to deform inward, so that each of the sockets 30 can be inserted into and detached from the respective receiving recess 20 easily and conveniently.

Although the invention has been explained in relation to its preferred embodiment(s) as mentioned above, it is to be understood that many other
10 possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended claim or claims will cover such modifications and variations that fall within the true scope of the invention.